JCB
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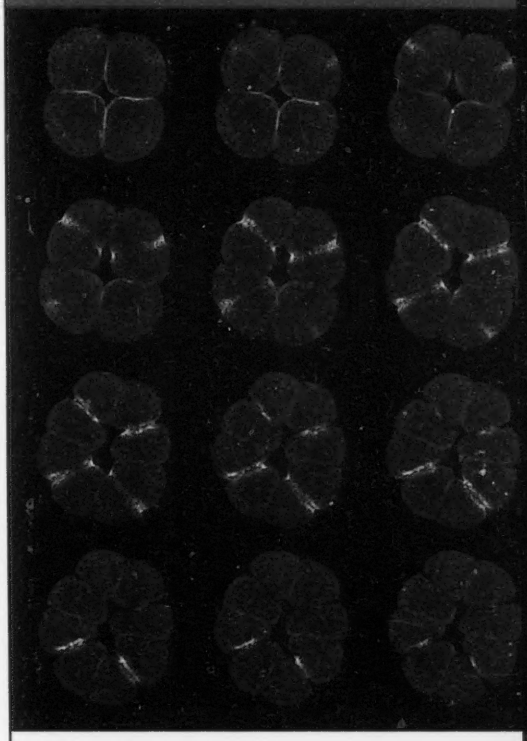

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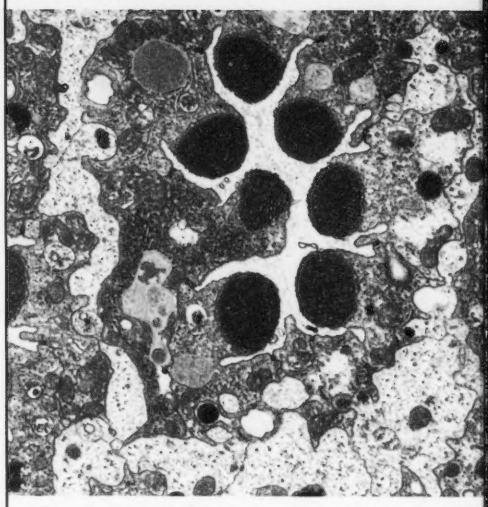

Photoreceptors in *bnch* mutant flies accumulate carbohydrates in inclusions (green) that lead to neuronal death .
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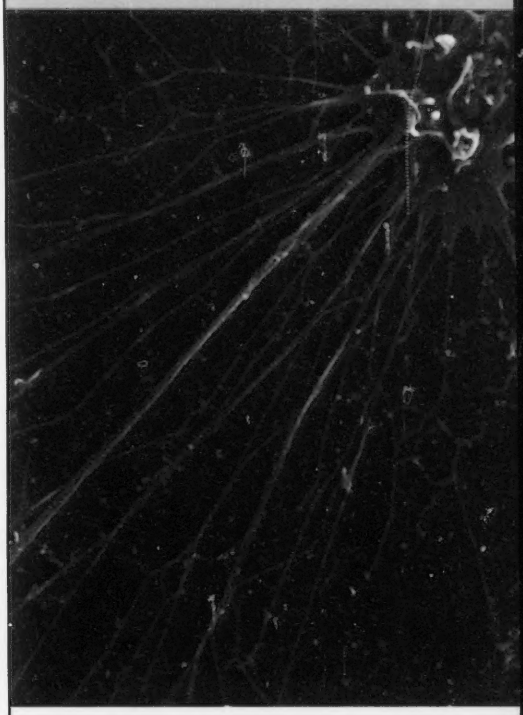

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237 The WD40 protein Caf4p is a component of the mitochondrial fission machinery and recruits Dnm1p to mitochondria
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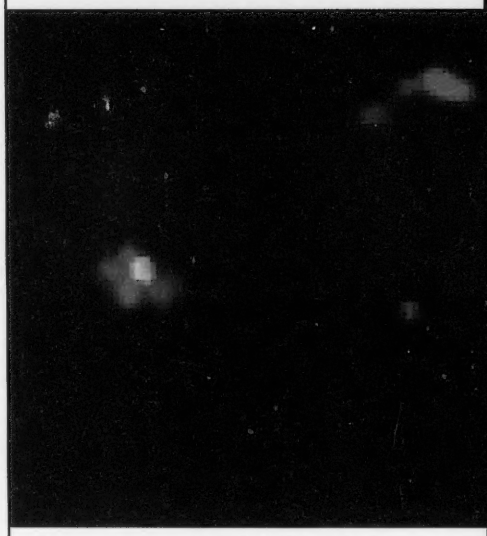

The meiotic association (left) of spindle pole bodies (red) and telomere clusters (green) is perturbed (right) in yeast lacking Rec8 cohesin.
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413 Maternal embryonic leucine zipper kinase (MELK) regulates multipotent neural progenitor proliferation
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499 Correction

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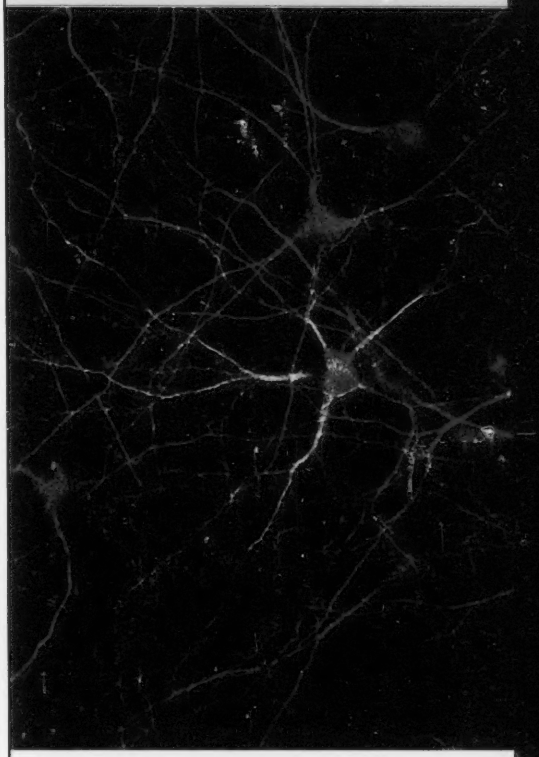

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The origin recognition complex (green) initiates dendritic branching and spine formation in postmitotic neurons.
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583 Rho GTPase regulation of exocytosis in yeast is independent of GTP hydrolysis and polarization of the exocyst complex
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595 Transcytosis of NgCAM in epithelial cells reflects differential signal recognition on the endocytic and secretory pathways
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607 An enzymatic cascade of Rab5 effectors regulates phosphoinositide turnover in the endocytic pathway
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675 β-Catenin controls cell sorting at the notochord–somite boundary independently of cadherin-mediated adhesion
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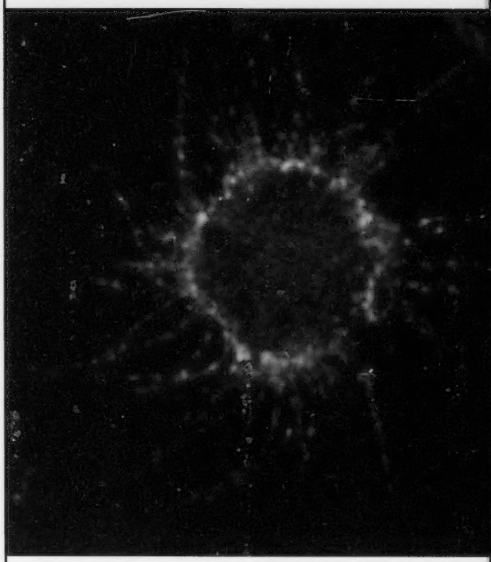

EGFR (green) bound to EGF (red) is transported on filopodia toward the cell body before endocytosis.
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709 Plx1 is the 3F3/2 kinase responsible for targeting spindle checkpoint proteins to kinetochores
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745 Distinct regulation of Ubc13 functions by the two ubiquitin-conjugating enzyme variants Mms2 and Uev1A
Parker L. Andersen, Honglin Zhou, Landon Pastushok, Trevor Moraes, Sean McKenna, Barry Ziola, Michael J. Ellison, Vishva M. Dixit, and Wei Xiao

757 AtRMR1 functions as a cargo receptor for protein trafficking to the protein storage vacuole
Misoon Park, Daeseok Lee, Gil-Je Lee, and Inhwan Hwang

769 Assembly and trafficking of caveolar domains in the cell: caveolae as stable, cargo-triggered, vesicular transporters
Akiko Tagawa, Anna Mezzacasa, Arnold Hayer, Andrea Longatti, Lucas Pelkmans, and Ari Helenius

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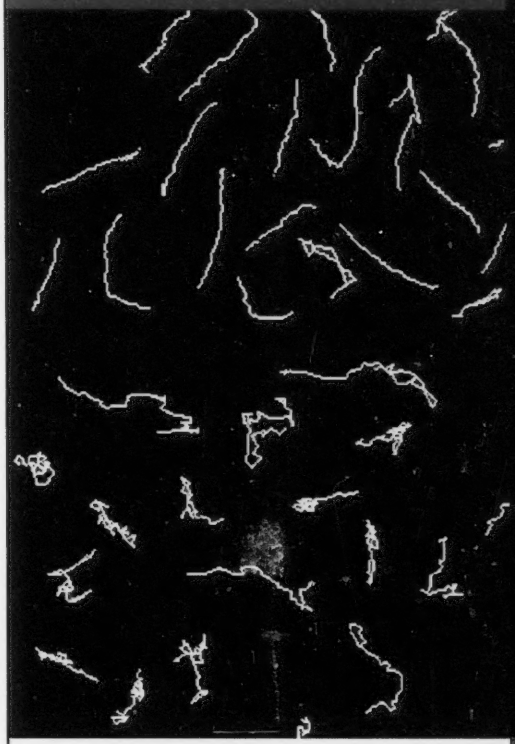

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Cell migration patterns reveal that persistent directed migration (top) results from decreased Rac activity. Random migration (bottom) occurs in cells expressing high levels of Rac.

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781 Abnormal nuclear shape and impaired mechanotransduction in emerin-deficient cells
Jan Lammerding, Janet Hsiao, P. Christian Schulze, Serguei Kozlov, Colin L. Stewart, and Richard T. Lee

793 A Rac switch regulates random versus directionally persistent cell migration
Roumen Pankov, Yukinori Endo, Sharona Even-Ram, Masaru Araki, Katherine Clark, Edna Cukierman, Kazue Matsumoto, and Kenneth M. Yamada

803 Regulatory mechanisms required for DE-cadherin function in cell migration and other types of adhesion
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813 The positioning and segregation of apical cues during epithelial polarity establishment in *Drosophila*
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825 CEACAM engagement by human pathogens enhances cell adhesion and counteracts bacteria-induced detachment of epithelial cells
Petra Muenzner, Manfred Rohde, Susanne Kneitz, and Christof R. Hauck

837 PTP-1B is an essential positive regulator of platelet integrin signaling
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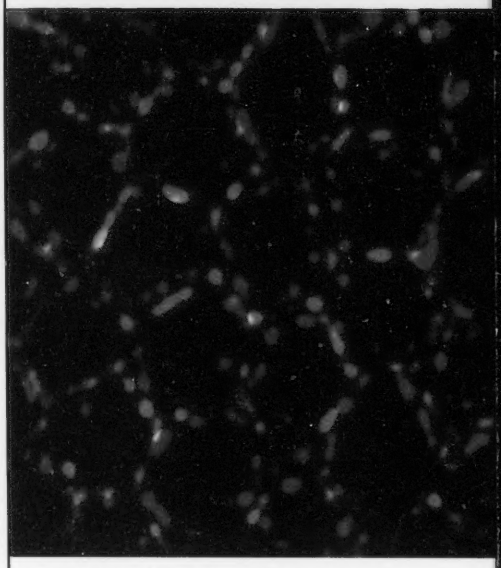

Bazooka (red), which positions adherens junctions (blue) in the apical domain, is recruited via several mechanisms, including dynein-mediated transport to the minus ends of microtubules (green).
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- Getting nuclei moving

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881 Proline residues of transmembrane domains determine the sorting of inner membrane proteins in mitochondria
Stephan Meier, Walter Neupert, and Johannes M. Herrmann

889 A novel mechanism of actin filament processive capping by formin: solution of the rotation paradox
Tom Shemesh, Takanori Otomo, Michael K. Rosen, Alexander D. Bershadsky, and Michael M. Kozlov

895 Cdc42 and Par6–PKCζ regulate the spatially localized association of Dlg1 and APC to control cell polarization
Sandrine Etienne-Manneville, Jean-Baptiste Manneville, Sarah Nicholls, Michael A. Ferenczi, and Alan Hall

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903 FOXO1a acts as a selective tumor suppressor in alveolar rhabdomyosarcoma
Philippe R.J. Bois, Kamel Izeradjene, Peter J. Houghton, John L. Cleveland, Janet A. Houghton, and Gerard C. Grosveld

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A multipolar neuron that lacks LIS1 extends an axon, but does not become migratory. For more effects of LIS1 loss, see page 935.

913 A role for the eIF4E-binding protein 4E-T in P-body formation and mRNA decay
Maria A. Ferraiuolo, Sanjukta Basak, Josee Dostie, Elizabeth L. Murray, Daniel R. Schoenberg, and Nahum Sonenberg

925 Dynamic cycling of eIF2 through a large eIF2B-containing cytoplasmic body: implications for translation control
Susan G. Campbell, Nathaniel P. Hoyle, and Mark P. Ashe

935 LIS1 RNA interference blocks neural stem cell division, morphogenesis, and motility at multiple stages
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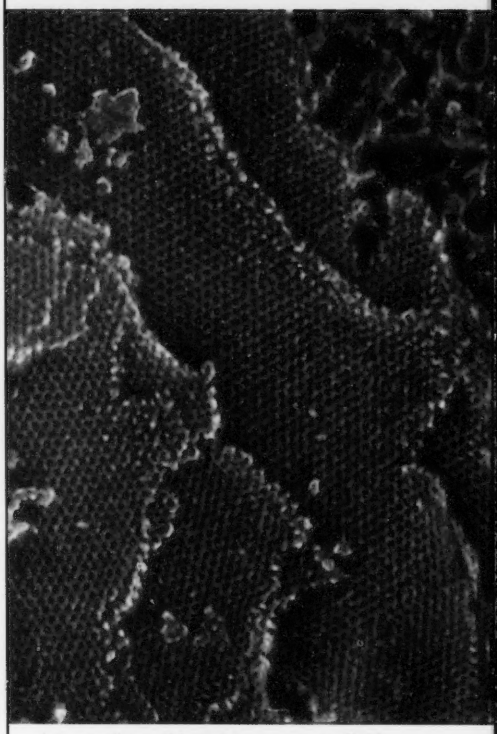
947 Nebulin regulates the assembly and lengths of the thin filaments in striated muscle
Abigail S. McElhinny, Catherine Schwach, Melinda Valichnac, Sarah Mount-Patrick, and Carol C. Gregorio

959 Syntabulin-mediated anterograde transport of mitochondria along neuronal processes
Qian Cai, Claudia Gerwin, and Zu-Hang Sheng

971 External scaffold of spherical immature poxvirus particles is made of protein trimers, forming a honeycomb lattice
Patricia Szajner, Andrea S. Weisberg, Jacob Lebowitz, John Heuser, and Bernard Moss

983 The divergent DSL ligand Dll3 does not activate Notch signaling but cell autonomously attenuates signaling induced by other DSL ligands
Ena Ladi, James T Nichols, Weihong Ge, Alison Miyamoto, Christine Yao, Liang-Tung Yang, Jim Boulter, Yi E. Sun, Chris Kintner, and Gerry Weinmaster

993 Stable interaction between α5β1 integrin and Tie2 tyrosine kinase receptor regulates endothelial cell response to Ang-1
Ilaria Cascone, Lucia Napione, Fabrizio Maniero, Guido Serini, and Federico Bussolino



A mutant form of the D13 poxvirus scaffold protein forms flat sheets that resemble the curved honeycombs of immature virions but lack pentagonal facets. 3D glasses provided on inside back cover; left eye red.
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  K.A. Nyberg

From The Archive

1018
- Viruses catch an endocytic ride into the cell
- What the cytoskeleton really looks like
  K. Powell

RESEARCH ARTICLES

Reports

1021 Dnm1 forms spirals that are structurally tailored to fit mitochondria
Elena Ingerman, Edward M. Perkins, Michael Marino, Jason A. Mears, J. Michael McCaffery, Jenny E. Hinshaw, and Jodi Nunnari

1029 The Rac activator Tiam1 controls tight junction biogenesis in keratinocytes through binding to and activation of the Par polarity complex
Alexander E E. Mertens, Tomasz P. Rygiel, Cristina Olivo, Rob van der Kammen, and John G. Collard

Articles

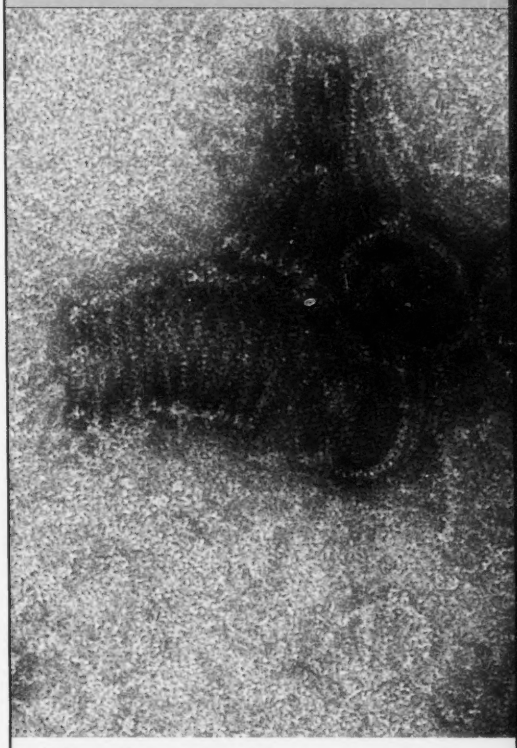
1039 Aurora A activates D-TACC–Msps complexes exclusively at centrosomes to stabilize centrosomal microtubules
Teresa P. Barros, Kazuhisa Kinoshita, Anthony A. Hyman, and Jordan W. Raff

1047 Aurora A phosphorylation of TACC3/maskin is required for centrosome-dependent microtubule assembly in mitosis
Kazuhisa Kinoshita, Tim L. Noetzel, Laurence Pelletier, Karl Mechtler, David N. Drechsel, Anne Schwager, Mike Lee, Jordan W. Raff, and Anthony A. Hyman

1057 Function and regulation of Maskin, a TACC family protein, in microtubule growth during mitosis
Isabel Peset, Jeanette Seiler, Teresa Sardon, Luis A. Bejarano, Sonja Rybina, and Isabelle Vernos

1067 Ganglioside-induced differentiation associated protein 1 is a regulator of the mitochondrial network: new implications for Charcot-Marie-Tooth disease
Axel Niemann, Marcel Ruegg, Veronica La Padula, Angelo Schenone, and Ueli Suter

Articles with related stories in the IN THIS ISSUE section have page numbers in RED.



On the cover

Dnm1 forms spirals in vitro; spirals of the same size constrict mitochondria during fission.

See page 1021.

1079 Selective role for superoxide in $InsP_3$ receptor–mediated mitochondrial dysfunction and endothelial apoptosis
Muniswamy Madesh, Brian J. Hawkins, Tatyana Milovanova, Cunnigaiper D. Bhanumathy, Suresh K. Joseph, Satish P. RamachandraRao, Kumar Sharma, Tomohiro Kurosaki, and Aron B. Fisher

1091 The vacuolar DHHC-CRD protein Pfa3p is a protein acyltransferase for Vac8p
Jessica E. Smotrys, Marissa J. Schoenfish, Monica A. Stutz, and Maurine E. Linder

1101 Lithium induces autophagy by inhibiting inositol monophosphatase
Sovan Sarkar, R. Andres Floto, Zdenek Berger, Sara Imarisio, Axelle Cordenier, Matthieu Pasco, Lynnette J. Cook, and David C. Rubinsztein

1113 PKA-catalyzed phosphorylation of tomosyn and its implication in Ca^{2+}-dependent exocytosis of neurotransmitter
Takeshi Baba, Toshiaki Sakisaka, Sumiko Mochida, and Yoshimi Takai

1127 Neurotransmitter release regulated by a MALS–liprin-α presynaptic complex
Olav Olsen, Kimberly A. Moore, Masaki Fukata, Toshinari Kazuta, Jonathan C. Trinidad, Fred W. Kauer, Michel Streuli, Hidemi Misawa, Alma L. Burlingame, Roger A. Nicoll, and David S. Bredt

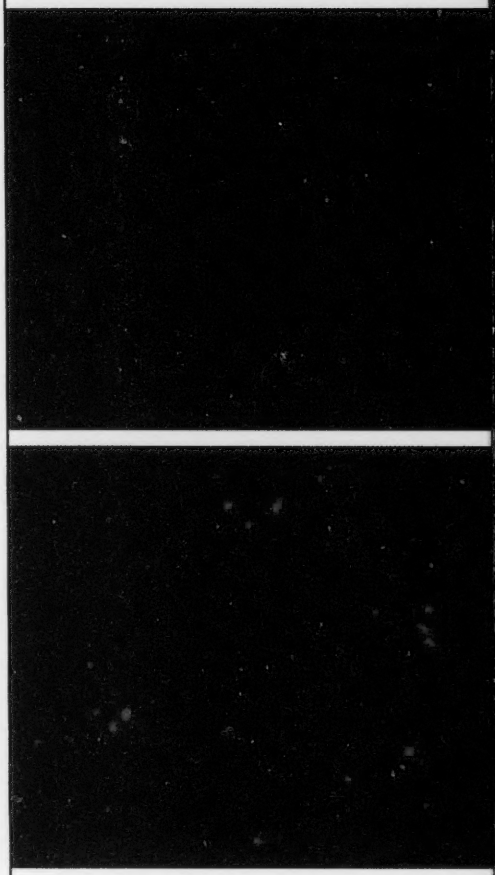
1135 Cardiac neural crest cells contribute to the dormant multipotent stem cell in the mammalian heart
Yuichi Tomita, Keisuke Matsumura, Yoshio Wakamatsu, Yumi Matsuzaki, Isao Shibuya, Haruko Kawaguchi, Masaki Ieda, Sachiko Kanakubo, Takuya Shimazaki, Satoshi Ogawa, Noriko Osumi, Hideyuki Okano, and Keiichi Fukuda

1147 Spines and neurite branches function as geometric attractors that enhance protein kinase C action
Madeleine L. Craske, Marc Fivaz, Nizar N. Batada, and Tobias Meyer

1159 Cell adhesion molecules regulate Ca^{2+}-mediated steering of growth cones via cyclic AMP and ryanodine receptor type 3
Noriko Ooashi, Akira Futatsugi, Fumie Yoshihara, Katsuhiko Mikoshiba, and Hiroyuki Kamiguchi

1169 Correction

1171 Correction



LiCl treatment (bottom) increases the formation of autophagosomes (red).
See page 1101.